

# Report -

# GCMS Analysis of 26 allergenic components of All-In-One Hexapeptide Filling Cream essential oil BORATORIES

Study Director: Dr. Hueymin Lai Hueymin Lai

Test Facility: ImDerma Laboratories Co., Ltd.

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Date: June 21, 2023

**Total pages: 9 (including cover page)** 

#### **GENERAL INFORMATION**

#### A. Name of Sponsor:

李秀錦女士 (Ms. Lee Sau Kam)

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#### **B.** Testing Facility and Location of Study:

P1 and P2 Laboratories of ImDerma Laboratories Co., Ltd.

Address: 5F, No. 5, Lane 91, Tung-Mei Road, East District, Hsin-Chu city, Taiwan 30010

#### C. Laboratory Personnel:

Study Director: Hueymin Lai, Ph.D.

Staff: T.-Y. Huang, M.S.; Y.-C. Hung, B.S.; S. Yang, M.S.

#### D. Sample and Received Date: December 24, 2021

Sample Name: All-In-One Hexapeptide Filling Cream essential oil (六肽全效

液晶豐潤霜用精油)

Sample Serial Number: FS23051601S7



Picture: All-In-One Hexapeptide Filling Cream essential oil (六肽全效液晶豐潤霜用精油)

**E. Study Duration**: May 21, 2023 to June 10, 2023

All data, documentation, records, protocols, and final reports generated as a result of this study will be inventoried and archived by ImDerma Laboratories Co., Ltd. The retaining duration of those records will be in accordance with the client requirement.

#### **METHOD AND INSTRUMENTS**

#### Method

The principle of GC-MS detection is mainly to first use gas chromatography to efficiently separate the mixed substances to be tested. After separation, each component will enter the mass spectrometer in turn and be ionized into ions. Then the mass spectrometer begins to perform analysis and determination to obtain accurate test results. The results are transmitted to the computer system in the form of mass spectrometry signals and finally analyzed by the computer.

#### **Instruments**

Essential oils were diluted to 1% sample with Methanol ', Injection Volume : 1uL  $^{\circ}$  GCMS : GC-2010 plus ', SH-Rxi-5Sil MS column (  $30.0 \text{m} \times 0.25 \text{mm} \times 0.25 \text{um}$  ) ', Mass Spectrometry QP-2020 ', Shimadzu ', JP  $^{\circ}$  GC-MS Condition : Injector mode : 1 : 100 / split ', Column flow : He  $^{\circ}$  1.0 ml/min ', Column oven temp. :  $50^{\circ}$ C ', Injection temp. :  $250^{\circ}$ C ', Interface temp. :  $250^{\circ}$ C ', Ion Source temp. :  $220^{\circ}$ C ', Temperature program : Initial temp  $50^{\circ}$ C ', Heat at  $10^{\circ}$ C/min to  $300^{\circ}$ C ', Total  $25^{\circ}$  min. ', MS m/z=40-400  $^{\circ}$ 



Picture of the instrument used in this testing.

## REQUIREMENT BY EU 1223/2009 REGULATION

According to the EU cosmetics regulations (Cosmetics Regulation (EC) No. 1223/2009) Amend Annex III, and SCCS opinion on fragrance allergens in cosmetic products (SCCS / 1459/11), when 26 kinds of potentially allergenic aroma Fragrance allergens exceed 0.001% in leave-on products, and exceed 0.01% in wash-off products, except for the general names of fragrance, parfum or aroma in the ingredient list, they need to be marked separately these allergenic aroma molecules.

# List A: Fragrance chemicals, which according to existing knowledge, are most frequently reported and well-recognized consumer allergens.

- 1. Amyl cinnamal 122-40-7
- 2. Amylcinnamyl alcohol 101-85-9
- 3. Benzyl alcohol 100-51-6
- 4. Benzyl salicylate 118-58-1
- 5. Cinnamyl alcohol 104-54-1
- 6. Cinnamal 104-55-2
- 7. Citral 5392-40-5
- 8. Coumarin 91-64-5
- 9. Eugenol 97-53-0
- 10. Geraniol 106-24-1
- 11. Hydroxycitronellal 107-75-5
- 12. Hydroxymethylpentyl-cyclohexenecarboxaldehyde 3 1906-04-4
- 13. Isoeugenol 97-54-1

#### List B: Fragrance chemicals, which are less frequently reported and thus less

#### documented as consumer allergens.

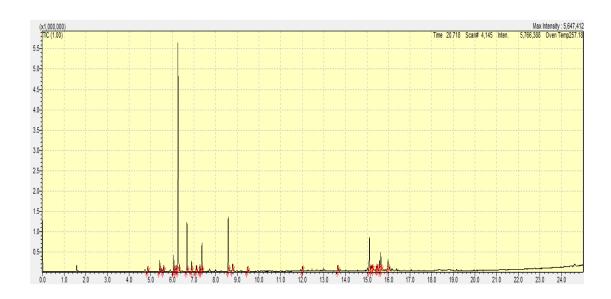
- 14. Anisyl alcohol 105-13-5
- 15. Benzyl benzoate 120-51-4
- 16. Benzyl cinnamate 103-41-3
- 17. Citronellol 106-22-9
- 18. Farnesol 4602-84-0
- 19. Hexyl cinnamaldehyde 101-86-0
- 20. Lilial 80-54-6
- 21. d-Limonene 5989-27-5
- 22. Linalool 78-70-6
- 23. Methyl heptine carbonate 111-12-6
- 24. 3-Methyl-4-(2, 6, 6-trimethyl-2-cyclohexen-1-yl)-3-buten-2-one 127-51-5

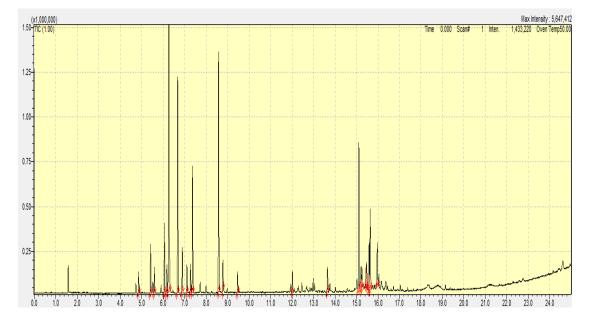
#### Furthermore, two fragrances (natural mixtures) were added.

- 25. Oak moss 90028-68-5
- 26. Tree moss 90028-67-4

SCCS is currently working on a new amendment to Regulation No. 1223/2009, which is to expand the list of fragrance allergens from 26 to 82. New allergens may include: Menthol, Terpineol, Linalyl Acetate, Camphor, Vanillin, Geraniol derivatives: Geranial and Geranyl Acetate, and some well-known essential oils: ylang-ylang oil (Cananga Odorata Flower Oil), cinnamon oil (Cinnamomum Zeylanicum Bark Oil), or lavender oil (Lavandula Officinalis Flower Oil).

# **RESULT**





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No	Name	Rt	Area	% (w/w)
1	alphaPinene	4.87	1.69E+05	0.79
2	Sabinene	5.42	3.92E+05	1.84
3	betaMyrcene	5.60	2.05E+05	0.96
4	(+)-4-Carene	6.07	5.76E+05	2.69
5	o-Cymene	6.18	2.46E+05	1.15
6	D-Limonene	6.26	9.05E+06	42.32
7	3-Carene	6.68	1.82E+06	8.49
8	5-Isopropyl-2-methylbicyclo[3.1.0]hexan-2-ol	6.89	4.03E+05	1.89
9	Terpinolene	7.11	2.45E+05	1.15
10	Linalool	7.27	2.44E+05	1.14
11	cisbetaTerpineol	7.37	1.12E+06	5.23
12	Terpene-4-ol	8.59	2.16E+06	10.09
13	p-menth-1-en-8-ol	8.78	2.79E+05	1.31
14	Linalyl acetate	9.47	1.77E+05	0.83
15	Caryophyllene	12.02	1.92E+05	0.90
16	Nerolidol	13.65	2.19E+05	1.02
17	alphaSantalol	15.12	1.36E+06	6.34
18	alphaBisabolol	15.22	3.01E+05	1.41
19	Bergamotol	15.26	1.55E+05	0.72
20	alphaSantalene	15.45	1.61E+05	0.75
21	Farnesol	15.47	2.22E+05	1.04
22	betaSantalol	15.59	4.28E+05	2.00
23	Nuciferol	15.64	8.51E+05	3.98
24	Cedr-8-en-13-ol	15.97	4.18E+05	1.96
No	allergenic fragrance		Area	% (w/w)
6	D-Limonene		9.05E+06	42.32
10	Linalool		2.44E+05	1.14
21	Farnesol		2.22E+05	1.04
		total		44.50
	Amyl cinnamal · Amylcinnamyl alcohol ·			
	Benzyl alcohol · Benzyl salicylate · Cinnamyl			
	alcohol、Cinnamal、Citral、Coumarin、			
	Eugenol · Geraniol · Hydroxycitronellal ·		ND	
	Hydroxymethylpentylcyclo-			
	hexenecarboxaldehyde · Isoeugenol · Anisyl			
	alcohol · Benzyl benzoate · Benzyl			

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cinnamate · Citronellol · Hexyl		
cinnamaldehyde · Lilial · Methyl heptine		
carbonate · 3-Methyl-4-(2, 6, 6-trimethyl-2-		
cyclo-hexen-1-yl)-3-buten-2-one · Oak moss ·		
Tree moss		

**Conclusions**: The All-In-One Hexapeptide Filling Cream essential oil contains 3 kinds of potentially allergenic aroma molecules (fragrance allergens) out of 26 kinds: D-Limonene, Linalool, and Farnesol, with a total ratio of 44.5%.

## **REFERENCES:**

The Scientific Committee on Consumer Safety (SCCS) opinion on fragrance allergens in cosmetic products, (SCCS / 1459/11), 13th plenary meeting, 13-14 December 2011.